



Diabetes Education Fact Sheet

Diabetes Education is the key to controlling diabetes.

Diabetes education, also known as diabetes self-management education (DSME) and diabetes self-management training (DSMT¹), is a collaborative process through which people with or at risk for diabetes gain the knowledge and skills needed to modify behavior and successfully self-manage the disease and its related conditions. The intervention aims to achieve optimal health status, better quality of life and reduce the need for costly healthcare.

Diabetes education focuses on the AADE7™ Self-Care Behaviors that are essential for improved health status and greater quality of life. These behaviors are:

- Healthy eating
- Being active
- Monitoring
- Taking medication
- Problem solving
- Healthy coping
- Reducing risks

Healthy People 2010 objective regarding diabetes education

- 60 percent of persons with diabetes should receive formal diabetes education.²ⁱ

Proportion people with diabetes who receive diabetes education

Estimates vary from 1% to more than 50%.

- National (2005) data indicates that 54.3% of people with diabetes who responded to a survey had attended some type of diabetes self-management class.ⁱⁱ
- According to the 2007 Roper U.S. Diabetes Patient Market Study³ conducted in July-September, 2007, out of 16,660,000 *diagnosed* diabetes patients in the U.S., 26% or 4,249,000 patients have seen a diabetes educator in the past 12 months.ⁱⁱⁱ
- AADE's analysis of the Centers for Medicare and Medicaid Services (CMS) reimbursement for diabetes self-management training (DSMT) found about 1% of Medicare beneficiaries with diabetes received DSMT in 2004 and 2005.

¹ Medicare reimburses for Diabetes Self-management Training (DSMT) but not for DSME, hence we distinguish between DSMT and DSME when referencing Medicare coverage and payment.

² The baseline for this measure was taken in 1998. At that time, 45 percent of persons with diabetes were receiving formal diabetes education provided by any healthcare practitioner, but not necessarily a diabetes educator.

³ The question asked is: Have you visited a diabetes educator in the past 12 months?

Diabetes Programs and Interventions

Based on findings of the 2007 AADE National Practice Survey

Diabetes education/instruction is provided as:

One-on-one and Group	51%
One-on-one (individual)	31%
Group	16%
Telemedicine	02%

Diabetes education programs encompass a range of range of professional services, including:

Diabetes self-management education	75%
Medical nutrition therapy	57%
Clinical (medical management)	42%
Health care professional education	42%
Disease management.....	41%
Telephone care management.....	33%
Counseling services	27%
Case management	24%
Research	14%
Home care diabetes education.....	10%

Diabetes education programs utilize the following behavioral strategies:

Situational problem solving	70%
Cognitive reframing	45%
Patient contracts	41%
Conviction and confidence scaling	23%
Relapse prevention training.....	18%
Stimulus control	12%

Diabetes education is an effective interventions

- The Diabetes Prevention Program found that:
 - Lifestyle interventions are more effective than the drug metformin -- 50% of the participants in lifestyle interventions experienced > 7% loss of body weight.
 - The incidence of diabetes was reduced by 58% in lifestyle intervention group and by 31% in metformin group as compared to the placebo group.
 - Compared with no prevention, self-management reduces a high-risk person's 30-year chances of getting diabetes by about 11%, the chances of a serious complications by 8%, and the chances of dying of a complication of diabetes by 2.3%.^{viii}
- A 2008 study found that group-based lifestyle interventions help prevent or delay diabetes over time.^{iv}

Expenditures on Diabetes Education

For the Medicare population in 2005, CMS reimbursed only \$4.8 million on diabetes self-management training (DSMT) codes G108 and G109.⁴

Data shows that diabetes education saves money and decreases healthcare utilization

- Robbins et al found that hospitalization rates for patients who had no educational visits during follow-up was 38.1 per person per 100 years; the hospitalization rate was 34 percent lower (25.0 per person per 100 years) for patients who had at least one educational visit.^v

⁴ National level data for all age groups are not available.

- Boren conducted a literature review in 2008 and found that 18 of 26 papers identified reported findings that associated diabetes education (and disease management) with decreased cost, cost saving, cost-effectiveness or positive return on investment (ROI).^{vi}
 - Total mean costs/patient were \$918 lower than projection from initial year of enrollment.^{vii}
 - Cost analysis of disease-management program combined with diabetes education found a return on investment of \$4.34:1 ROI.^{viii}
 - Improved nutrition knowledge, anthropometric measures, and glucose control were estimated to reduce medical costs (hospitalizations) by \$94,010.^{ix}

Cost-savings are likely to occur when A1C is decreased through diabetes education

- Diabetes education leads to lower A1C levels. Wagner's study of an HMO in Washington State^x and Menzin's study^{xi} found that a sustained reduction in A1c level among adults with diabetes is associated with significant health care savings within 1 to 2 years of improvement in diabetes management. This improvement is even more marked in people with long-term diabetes-related complications.
- A 2004 evaluation of the Utah State University Extension Service Diabetes Education Program showed improved nutrition knowledge, anthropometric measures, and glucose control.^{xii}

Diabetes Education in Practice

Number of diabetes educators in practice

- At the current time, there are approximately 15,000 certified diabetes educators, and another 15,000 diabetes educators in practice who have not completed requirements for the CDE credential.
- There are about 600 BC-ADM credentialed persons in practice.
- A significant number of diabetes educators also practice around the globe.

Number of accredited diabetes self-management education/ training (DSME/T) programs

AADE received approval from CMS on February 27, 2009, effective March 30, 2009, and is now recognized as a national accrediting organization. As of June 1, 2009, AADE has 13 programs with over 70 sites and is continuously receiving applications for accreditation. Designed to increase patient access to diabetes education, AADE's Diabetes Education Accreditation Program (DEAP) has a simplified application process that expands options for delivering care in community-based settings as well as traditional settings.

The American Diabetes Association (ADA) has recognized over 2,000 accredited programs at more than 3,000 sites. The Indian Health Services (IHS) accredits 37 programs that are sponsored by Native Americans or Alaskan Natives. For both ADA and IHS, between 400 and 500 new applications have been received since 2001. There were more than 650 program renewals and more than 100 new applications in 2006. Approximately five percent of ADA-recognized programs closed in 2006

Number of patients seen by each diabetes educator and diabetes education program

Anecdotal evidence indicates that:

- Diabetes educators see between 4 to 10 patients/day.
- Accredited programs see approximately 500 patients with diabetes/year.
- In the initial encounter between the diabetes educator and the patient is typically 60 minutes (although this may vary). 30 minutes are typically spent in follow up sessions.

Who is on the Diabetes Education Team?

CMS requirements state that except in rural areas, diabetes education should be furnished using a multidisciplinary instructional team that meets following requirements:

- The team must include at least a registered dietitian and a CDE^{xiii} (registered nurse, pharmacist, exercise physiologist, physician assistant, psychologist, other) who have didactic experience & knowledge of diabetes clinical and educational issues.

- In a rural area, an individual who is qualified as a registered dietitian and as a CDE may furnish training and is deemed to meet the multidisciplinary team requirement.
- The team is qualified to teach in content areas specified.
- Standard 5 of the 2007 National Standards states: Diabetes self management education will be provided by one or more instructors. The instructors will have recent educational and experiential preparation in education and diabetes management or will be a certified diabetes educator. The instructor(s) will obtain regular continuing education in the field of diabetes management and education. At least one of the instructors will be a registered nurse, dietitian, or pharmacist. A mechanism must be in place to ensure that the participant's needs are met if those needs are outside the instructors' scope of practice and expertise.^{xiv}

Reimbursement for Diabetes Education

- Most private payors:
 - Have adopted Medicare's HCPCS Level II G Code (G0108) for DSMT
 - Cover and pay for DSMT/E in the primary care setting, although the terminology they use (DSMT, DSME, diabetes education) may vary
- Medicare has specific coverage policies for group and individual DSMT
- Nutrition is a key component of DSMT/E and may also be reimbursable as a separate service
 - Medicare reimburses G0109 for medical nutrition therapy services that meet set requirements
- Coverage and reimbursement policies vary across geographic locations. Each state has its own specific requirements. In 2007:
 - 27 states required nutrition therapy services for people with diabetes
 - At least 46 states required private payor coverage for diabetes-related services/supplies. Many specifically require diabetes education/training

ⁱ Healthy People 2010. Online Documents. <http://www.healthypeople.gov/Document/>. Accessed June 1, 2009.

ⁱⁱ Diabetes Prevention and Control Programs. 2008. <http://diabetes.niddk.nih.gov/dm/pubs/preventionprogram/>. Accessed June 2, 2009.

ⁱⁱⁱ 2007 Roper U.S. Diabetes Patient Market Study, November 2007. By permission of GfK Market Measures.

^{iv} Lindstrom J, Uusitupa M, Lifestlye intervention, diabetes, and cardiovascular disease. *Lancet*. 2008; 371: 1731-1733.

^v [Robbins JM, Thatcher GE, Webb DA, Valdmanis VG](#). Nutritionist visits, diabetes classes, and hospitalization rates and charges: the Urban Diabetes Study. *Diabetes Care*. 2008;31(4):655-60.

^{vi} Boren SA, Fitzner KA, Panhalkar PS²; Specker, J. Costs and Benefits Associated with Diabetes Education: A Review of the Literature. *The Diabetes Educator*. 2009;31(1):72-96.

^{vii} Garrett DG, Bluml BM. Patient self-management program for diabetes: first-year clinical, humanistic, and economic outcomes. *J Am Pharm Assoc*. 2005;45(2): 130-137.

^{viii} The Diabetes Prevention Program. DPP Results. 2008. <http://diabetesniddk.nih.gov/dm/pubs/preventionprogram/#results>. Accessed June 1, 2009.

^{ix} Christensen NK, Williams P, Pfister R. Cost savings and clinical effectiveness of an extension service diabetes program. *Diabetes Spectrum*. 2004;17(3):171-175.

^x Wagner EH, Sandhu N, Newton KM, McCulloch DK, Ramsey SD, Grothaus LC. Effect of improved glycemic control on health care costs and utilization. *JAMA*. 2001;285(2):182-189.

^{xi} Menzin J, Langley-Hawthorne C, Friedman M, Boulanger L, Cavanaugh R. Potential short-term economic benefits of improved glycemic control. *Diabetes Care*. 2001;24(1):51-55.

^{xii} Christensen NK, Williams P, Pfister R. Cost savings and clinical effectiveness of an extension service diabetes program. *Diabetes Spectrum*. 2004;17(3):171-175.

^{xiii} Centers for Medicare and Medicaid Services, HHS. 410.143.

http://edocket.access.gpo.gov/cfr_2007/octqtr/pdf/42cfr410.143.pdf. Accessed June 2, 2008.

^{xiv} Funnell M, Brown T, Childs B, Haas L, Hoseney G, et al. National Standards for Diabetes Self-Management Education. *The Diabetes Educator*. 2007;33:599-614.